

1 **SECTION 314 - CONTROLLED LOW STRENGTH MATERIAL (CLSM)**
 2 **FOR UTILITIES AND STRUCTURES**

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 4
 5 **314.01 Description.** This section describes furnishing and placing CLSM as self-
 6 compacted backfill material in utility trenches and other works in lieu of compacted
 7 fill, or where indicated in the contract documents or accepted by the Engineer.

8
 9 **314.02 Materials.**

10	Portland Cement	701.01
11		
12		
13	Fine Aggregate for Concrete	703.01
14		
15	Water	712.01
16		

17 Aggregates that are different than those specified in Subsection 703.01 - Fine
 18 Aggregate for Concrete may be used, subject to acceptance by the Engineer.

19
 20 CLSM shall include mixture of portland cement, aggregate, and water.
 21 Provide flowable CLSM with aggregate in suspension. Proportion CLSM to produce
 22 the following:

- 23
 24 **(A)** Backfill material that is self-compacting and able to be excavated, in
 25 the future, with conventional excavation equipment.
 26
 27 **(B)** Uniform, flowable mixture that is self-leveling when placed.
 28
 29 **(C)** 28-day compressive strength between 50 psi to 150 psi.

30
 31 Provide CLSM conforming to Section 601 – Structural Concrete except as
 32 modified in this section.

33
 34 **314.03 Construction.**

35
 36 **(A) Placement.** Check trench sides and bottom for cracks, voids, or other
 37 defects that may cause CLSM to escape trench. Plug or repair as
 38 necessary. Do not place CLSM until the Engineer has been notified and has
 39 been given an opportunity to inspect trench in accordance with Subsection
 40 105.11 - Inspection of the Work and Materials.

41
 42 Secure pipes and culverts within backfill area with straps, soil anchors,
 43 or other means to restrain pipes and culverts at grades indicated in the
 44 contract documents. Submit proposed restraint method.

45
 46 Seal conduits as necessary to prevent CLSM from flowing into
 47 conduits.

314.03

49 Place CLSM by chutes or pumps. Place CLSM around manholes and
50 in utility trenches in a manner to prevent floating conduits due to fluid
51 pressure from CLSM.

52
53 Place CLSM to fill line indicated in the contract documents, without
54 vibration or other means of compaction. Provide sufficient supply to allow
55 CLSM lifts to be placed without interruption.

56
57 In pavement trenches, limit fill so top of CLSM will not be higher than
58 bottom of aggregate base course or drainage layer. Fill voids completely with
59 CLSM during backfill operation.

60
61 Backfill trench in accordance with Section 204 - Excavation and
62 Backfill for Miscellaneous Facilities, Section 205 - Excavation and Backfill for
63 Bridge and Retaining Structures, or Section 206 - Excavation and Backfill for
64 Drainage Facilities, no earlier than eight hours after placing CLSM, unless
65 otherwise accepted by the Engineer.

66
67 If aggregate base course or drainage layer exists, reconstruct
68 aggregate base course or drainage layer in accordance with Section 304 -
69 Aggregate Base Course, Section 306 - Untreated Permeable Base Course,
70 Section 313 - Permeable Separator, and the contract documents.

71
72 Protect CLSM and backfill material from traffic during period before
73 restoration of pavement section.

74
75 Application of curing compounds or curing methods to CLSM will not
76 be required.

77
78 **(B) Acceptance.** Submit manufacturer's certification of CLSM and
79 include unconfined 28-day compressive strength test data for each mixture
80 used. Test data shall be current, having been obtained within one year of
81 proposed use.

82
83 **314.04 Measurement.** The Engineer will not measure CLSM for payment.

84
85 **314.05 Payment.** The Engineer will not pay for CLSM separately and will
86 consider the cost for CLSM as included in the contract prices of Section 204 -
87 Excavation and Backfill for Miscellaneous Facilities, Section 205 - Excavation and
88 Backfill for Bridges and Retaining Structures, or Section 206 - Excavation and
89 Backfill for Drainage Facilities, or combination thereof. The cost is for the work
90 prescribed in this section and the contract documents.

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END OF SECTION 314